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(54) Title: METHOD OF PRODUCT MANUFACTURER IDENTIFICATION

(57) Abstract

This invention relates to automatics and can be used for identification of product manufacturer or confirmation of authenticity of financial (bank) documents by identification of their consignor. It is an object of the present invention to provide the validity of received information about product manufacturer. The object is achieved as follows. A manufacturer (consignor) assigns to each article (document) an individual code consisting of two mismatching markers, applies it to the article and stores in the file of a specially programmed computer. A consumer reads one of the markers and sends it to manufacturer who determines the second marker corresponding to the received marker and informs the place of reading about it. The belonging of the product to the addressee whom the request has been sent to is determined by the matching of the two markers - the one received from the manufacturer and the other - applied to the product.

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METHOD OF PRODUCT MANUFACTURER IDENTIFICATION

This invention relates to automatics and can be used for identification of product manufacturer or confirmation of authenticity of financial (bank) documents by identification of their consignor.

The well-known identification method consists in applying to an article or its packing coded information about manufacturer. EAN-8 and EAN-13 (EAN - European Article Numbering) 8-, 13-position bar codes compatible with UCC (Universal Code Council) codes adopted in USA and Canada, have become widely spread for marking of products, coming to retail sales. A bar code is applied to products in the form of symbol readable by machine (magnetic card, radiofrequency tag, visual drawing, etc) for automatic identification of products. A code is decoded with the help of a reader connected to the computer data base with the information about product manufacturer. The bar code in this case is accompanied by digits so that a person without any special techical equipment could obtain information about manufacturer and its or his country - with the help of special classifiers. The first group of digits in this case denotes the country where the product manufacturer has been registered, the second - the individual code of the manufacturer itself.

The above-mentioned identification method of manufacturer is described, for instance, in the article: L.Šauriņa "Katrai precei - savs numurs" ("Latvijas tirdzniecības un rupniecības kameras", Riga, 1995, N 6, lpp.20-21), (L.Shaurinya "Each Product Should Have Its Own Number" ("The Latvian Chamber of Commerce and Industry", Riga, 1995, N 6, pp.20-21) or Н.Косогоров и А.Ильиных "Азбука штрихового кодирования" ("Компьютер Пресс", М., Август 1994, N 8, с.52-57), (N.Kosogorov and A.Ilynih "ABC of Bar Coding" (ComputerPress, Moscow, August 1994, N 8, pp.52-57)).

Disadvantage of the prior art is a low level of protection from unfair competition of manufacturers who claim their products to belong to the well-known companies (see, for example the article "Чем штриховые коды полезны за рубежом и у нас"/"Путь к успеху", М., 1994, N 1, с.70), ("The Usefulness Of Bar Codes Abroad And In Our Country"/"A Way To Success", Moscow, 1994, N 1, p.70). Widely spread thermo- and thermotransferring printers of high quality allow to make copies of labels with the original bar code of any company in any quantity which are not recognized by readers as false ones. The recommendations to compare the information about a manufacturer from bar code to that which is openly given on the label do not solve the problem in all the cases because each information carrier could be "borrowed" from one and the same company well-known in the given field.

It is an object of the present invention to provide the validity of received information about product manufacturer.

According to the present invention the object is achieved as follows. A product manufacturer assigns to each item (packing) of his products an individual code consisting of at least two mismatching markers, for example, in the form of multiposition digital numbers of an article or numbers coded in any other way. Both corresponding markers are stored, for instance, in the file of a specially programmed computer. If a consumer needs a confirmation whether the given product belongs to the mentioned manufacturer, he sends to the address of a manufacturer one of the markers applied to the product label. According to the received marker ("password") a manufacturer, on the

basis of previously stored information, determines response marker ("response") which corresponds to the received "password" and informs a consumer about this response marker. Comparison of the response marker to the second marker applied to the article allows to determine precisely whether the article being checked belongs to the manufacturer to whom the request was sent.

Manufacturer's coded address readable by the terminal sensors (at consumer's side) of communication system together with one of the markers sent to the coded address is applied to an article or its packing in order to create a fully automated process.

Prevention of the repeated request calls to a manufacturer (with the code indicated on the product and the code borrowed by unfair manufacturer for his product marking) is provided in such a way: after having received of the first request on each given combination of markers the manufacturer enters into computer inhibiton from issuing a repeated response.

For the clearness of the the result the manufacturer includes its own postal address into the batch of response message.

In case of expensive products marking, when single forgery of a bar code can be done from samples, exposed for sale, the codes are covered with a layer of optically opaque material thus preventing their usage without purchasing the product. While identifying the product the layer should be removed by the consumer.

In any case measures should be taken by a manufacturer to make code reading impossible before purchasing the product.

Examples of method realization.

Example 1. The code consisting of two markers which, for example, include two multi-position digits, is applied to the product and coated with easily removable layer of optically opaque material. The quantity of these digit positions is chosen due to the quantity of the manufactured product and the reasons excluding the possibility of getting a response by trial-and-error method. For example, there could be the following numbers: 8735218 and 3526711. By any communication means (Fax, Telex and so on) a consumer might inform a manufacturer about one of the markers - in the given example it is one of the 7-digit numbers, for instance, 8735218. Having received the marker-password the manufacturer determines the marker-response corresponding to it (the number 3526711) and informs the consumer about it to the indicated address. Being certain that the response matches the second number on the product packing the consumer will be sure that the information about the manufacturer given in transportation documents is valid.

Example 2. The manufacturer applies to the product two markers in the form of letter symbols, for example: A X C Y V P and X X O X X X, and also his code address which is given to the manufacturer in the INTERNET network. The consumer informs the manufacturer to the indicated address about one of the given markers and receives the response marker on the computer display interfaced with INTERNET network. The comparison of the markers is analogous to the Example 1.

Example 3. The manufacturer provides a product with a label consisting of code information (including his address) in the form of special bar code or magnetic record. With the help of automatic reading stations for product identification the consumer matches the applied code with the reader sensor. The second marker may be printed on the card - carrier of code magnetic records or displayed on the reading station where visual estimation of the comparison results is made, as described in Examples 1 and 2.

As appears from the above given description of invention the proposed method provides high level of validity of manufacturer identification, because only the product manufacturer has the data about corresponding marker codes, and the multiposition of markers excludes their guessing.

Besides, in case false or repeated requests about one and the same marker come from one of the stations, the control authorities could receive information about the accumulation of forged products in the given area and also about the area where illegal activities are carried out.

The described method may also be used for the marking of financial documents, for example, to prevent payment by false advice. This method is easily realized in banking system because the existing banking communication equipment could be easily adapted to the claimed method realization.

CLAIMS

1. The method of product manufacturer identificstion by code applied to the product or its packing, w h e r e i n to each product with the help of marking device an individual code is applied, which consists of at least two mismatching markers and is stored in the memory of electronic facilities interfaced with marking device and while being identified one of the markers is read with the help of a sensor and passed on to the manufacturer, where the latter determines the response marker corresponding to the received marker and informs about it at the place of reading, judging whether the marked product belongs to a given manufacturer by the coincidence of the second marker on the product and the received from the manufacturer response marker.

2. The method as defined in claim 1, w h e r e i n to the product or its packing additional coded address of manufacturer is applied.

3. The method as defined in claim 1 and 2, w h e r e i n on the side of manufacturer after the receiving of the first request inhibition is entered into computer from response issuing when the second request is made about one and the same marker.

4. The method as defined in claim 1, w h e r e i n the manufacturer additionaly includes the postal address into the response message.

5. The method as defined in claim 1, w h e r e i n the code applied to the product is covered with the layer of optically opaque material which is removed when being read.

INTERNATIONAL SEARCH REPORT

Int ional Application No
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*A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G06K17/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 G06K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 367 148 A (STORCH,L. ET AL.) 22 November 1994 see claims 1,2,4 ---	1,3
X	WO 84 03019 A (LIGHT SIGNATURES,INC.) 2 August 1984 see claims 4,6 ---	1,3,5
X	WO 82 00062 A (LIGHT SIGNATURES,ONC.) 7 January 1982 see claims 32,40 ---	1
X	US 4 108 364 A (TANAKA,T. ET AL.) 22 August 1978 see claim 1 ---	1,3
A	FR 2 711 825 A (BANCOURT,E.) 5 May 1995 see the whole document ---	1
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[X] Further documents are listed in the continuation of box C.

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PCT/LV 96/00004

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 101 376 A (LAWRENCE,J.G. ET AL.) 12 January 1983 see the whole document	1

1

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Int'l Application No
PCT/LV 96/00004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5367148 A	22-11-94	CA 1320581 A	20-07-93
		US 4814589 A	21-03-89
		AU 614470 B	29-08-91
		AU 7357487 A	09-11-87
		EP 0265497 A	04-05-88
		JP 1500243 T	02-02-89
		WO 8706372 A	22-10-87
		US 5088093 A	11-02-92
		US 5283422 A	01-02-94
		US 5548110 A	20-08-96
		AU 6723490 A	16-05-91
		EP 0506680 A	07-10-92
		WO 9106068 A	02-05-91
WO 8403019 A	02-08-84	US 4558318 A	10-12-85
		CA 1213371 A	28-10-86
		DE 3382689 A	08-07-93
		EP 0131574 A	23-01-85
		JP 7020781 A	24-01-95
		JP 60500466 T	04-04-85
		US 4816824 A	28-03-89
		US 4651150 A	17-03-87
		US 4739322 A	19-04-88
WO 8200062 A	07-01-82	AU 7414281 A	19-01-82
		CA 1160749 A	17-01-84
		CA 1180814 A	08-01-85
		DE 3177255 A	17-10-91
		EP 0054071 A	23-06-82
		EP 0155982 A	02-10-85
		EP 0298156 A	11-01-89
		JP 6016312 B	02-03-94
		JP 57500851 A	13-05-82
		US 4785290 A	15-11-88
		US 4816824 A	28-03-89
		US 4423415 A	27-12-83
		US 4558318 A	10-12-85
		US 4489318 A	18-12-84
		US 4546352 A	08-10-85
		US 4568936 A	04-02-86

INTERNATIONAL SEARCH REPORT

Information on patent family members

In' ional Application No
PCT/LV 96/00004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 8200062 A		US 4663622 A	05-05-87
		US 4675669 A	23-06-87
		US 4739322 A	19-04-88
US 4108364 A	22-08-78	JP 1074782 C	30-11-81
		JP 52039346 A	26-03-77
		JP 56018983 B	02-05-81
		AU 504190 B	04-10-79
		AU 1808676 A	06-04-78
		BR 7606351 A	31-05-77
		CA 1083716 A	12-08-80
		FR 2325986 A	22-04-77
		GB 1554585 A	24-10-79
		HK 55580 A	10-10-80
FR 2711825 A	05-05-95	NONE	
GB 2101376 A	12-01-83	US 4463250 A	31-07-84